



PATENTS  
112025-0116

#9

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re The Application of:  
Bernie Pearce et al.

Serial No.: 09/283,125

Filed: March 31, 1999

For: MAC Address Extension to  
Maintain Router Information In  
Source Routed Computer Net-  
works

Examiner: Hom, Shick

Art Unit: 2666

Cesari and McKenna, LLP  
88 Black Falcon Avenue  
Boston, MA 02210  
August 9, 2006

"Express Mail" Mailing-Label Number: EV 916598303 US

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

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AUG 14 2006

OFFICE OF PETITIONS

**PETITION TO THE DIRECTOR UNDER 37 CFR § 1.181(a) and 37 CFR 1.137(b)**

Applicant hereby requests, under 37 CFR § 1.181(a), a response to the Request to Withdraw Holding of Abandonment submitted to the PTO on August 8, 2003, and, in the alternative, hereby submits, under 37 CFR § 1.137(b), a Petition to Revive The Application as Unintentionally Abandoned. Further, Applicant again requests consideration of the responsive Amendment timely received by the PTO on March 7, 2003.

Repln. Ref: 02/28/2007 CKHLOK 0008114500  
02/28/2007 Name/Number: 09283125  
FC: 9204 \$1500.00 CR

08/11/2006 EFLORES 00000061 09283125

01 FC:1453 1500.00 OP

Adjustment date: 02/28/2007 CKHLOK  
08/11/2006 EFLORES 00000061 09283125  
01 FC:1453 -1500.00 OP

On December 10, 2002, a non-final Office Action was issued in this case. Applicant timely filed an Amendment within the shortened 3-month time period. The following sections I-IV set forth the facts relating to Applicant's timely response and the events thereafter. Subsequent sections V-VI specify the action respectfully requested in this matter.

### **I. Applicant Timely Responded To The Office Action**

On March 7, 2003, Applicant timely mailed, via United States Postal Service (USPS) Express Mail, a responsive Amendment. The Amendment was received by the PTO the same day and accorded a "date-in" of March 7, 2003 as confirmed by a return receipt postcard with an itemized listing of documents stamped by the PTO, attached herewith as part of Exhibit A.

Despite the fact that the Amendment was received by the PTO well before the statutory 6-month deadline of June 10, 2003, a Notice of Abandonment was issued on July 15, 2003. Apparently, the Amendment was somehow misplaced at the PTO between receipt and forwarding to an Examiner.<sup>1</sup>

### **II. Applicant Timely Responded To The Notice Of Abandonment With a Request to Withdraw the Holding of Abandonment**

On August 8, 2003 and again on August 11, 2003 Applicant faxed a Request to Withdraw the Holding of Abandonment to the PTO, therein providing proof (i.e. the stamped return receipt postcard) that there had been no abandonment in fact as the Amendment was previously received by the PTO, and providing a duplicate copy of the misplaced Amendment.<sup>2</sup> A copy of the faxed Request is attached as Exhibit A. The

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<sup>1</sup> Further note, a Change of Correspondence Address document that accompanied the Amendment of March 7, 2003 in the same envelope apparently was not misplaced. The Change of Correspondence Address document must have been received and processed since the Notice of Abandonment was mailed to the correct address.

<sup>2</sup> As noted in the Manual of Patent Examining Procedure (MPEP), Petitions (such as a Petition to Withdraw Holding of Abandonment) may be transmitted by facsimile. *See* MPEP § 502.01 (8th Ed., 1st Rev.) (most

faxed Request was successfully received by the PTO no later than August 11, 2003 as confirmed by a telephone call to the Examiner and by a machine-generated Transmission Report that indicates the request was successfully received, a copy of which is attached as Exhibit B. Thus, a Request to Withdraw the Holding of Abandonment was timely filed less than one month after the Notice of Abandonment was issued. *See* 37 CFR § 1.181(f) (indicating a discretionary two-month window for timeliness).

### **III. The Request Met All Of The Requirements Of A Petition To Withdraw Holding Of Abandonment Under 37 CFR § 1.181(a)**

In formal terms, the faxed Request constituted a Petition to Withdraw Holding of Abandonment, and should have been treated as such. Given the simple nature of the PTO's error (misplacing the Amendment), combined with the straightforward nature of the evidence (a stamped return receipt postcard), the request itself was simple.

Most importantly, the faxed Request met all the statutory and regulatory requirements of a Petition to Withdraw Holding of Abandonment under 37 CFR § 1.181(a).<sup>3</sup> First, in accord with MPEP § 711.03, the Request included a requested action by the PTO. Specifically, Applicant wrote "please have the case revived and enter and consider the attached amendment." *See* Exhibit A. *See also* MPEP § 711.03 (8th Ed., 1st Rev.) ("When advised of the abandonment of his or her application, applicant may either ask for reconsideration of such holding, if he or she disagrees with it on the basis that there is no abandonment in fact; or petition for revival under 37 CFR 1.137.")

Second, Applicant included proof that there had been no abandonment in fact with the Request. Specifically, Applicant included a copy of the stamped postcard showing timely receipt of a responsive Amendment by the PTO. As noted in the MPEP: "A

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recent revision at the time). The Request was retransmitted on August 11, 2003 because the Examiner indicated, by telephone, that he had not yet received a copy of the first transmission at his personal office, though it appears to have been received at the PTO. The Examiner confirmed receipt at his personal office of the August 11, 2003 Request.

<sup>3</sup> In the alternative, the faxed Request could be considered analogous to a Petition under 37 CFR § 1.10(e) to accord a proper filing date to correspondence properly addressed and mailed via USPS Express Mail but never received by the PTO. Notably, the faxed Request met the requirements of this section, as well.

postcard receipt which itemizes and properly identifies the items which are being filed serves as *prima facie* evidence of receipt in the USPTO of all the items listed thereon on the date stamped thereon by the USPTO.” MPEP § 503 (8th Ed., 1st Rev.).

Third, the faxed Request properly identified the Serial Number of the Application at issue.<sup>4</sup> See 37 CFR § 1.6(d).

Fourth, while Applicant believes no fee was required, the PTO was authorized to charge Applicant’s deposit account for any fees due. See Exhibit A, page 11 and MPEP § 711.03(c)(I) (8th Ed., 1st Rev.) (stating “such a petition does not require a fee”).

Thus, the faxed Request met all of the formal requirements of a Petition to Withdraw Holding of Abandonment under 37 CFR § 1.181(a).

Furthermore, even if the PTO believed the request was deficient in some formal regard, Applicant notes the well-established PTO practice of issuing rejections based upon formal non-compliance. Such rejections usually include a grounds for rejection, and a timeframe for response, and often suggestions on how to remedy the formal issue. Given that Applicant received no rejection from the PTO in response to the Request, Applicant naturally assumed action was forthcoming in the case, and that an Office Action responding to the Amendment would eventually be issued.

#### **IV. The Faxed Request Should Have Been Granted**

The faxed request met all of the statutory and regulatory requirements, and complied with the relevant sections of the MPEP. On its merits, the Request should have been granted, as it demonstrated that the Application was not abandoned in fact. Despite the brevity of the Request, all necessary information and evidence was included.

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<sup>4</sup> The serial number is clearly visible on the page after the cover page. While, for facsimile transmissions, 37 CFR § 1.6(d) indicates a preference that the Serial Number “*should* be entered as a part of the sender’s identification on a facsimile cover sheet”, it does not require that it *must*. Further, the Applicant and Examiner spoke telephonically regarding the request, and mutually understood which application was at issue.

**V. Applicant Hereby Requests A Response To The Faxed Request Be Issued**

Applicant has yet to receive a response from the PTO regarding the faxed Request to Withdraw the Holding of Abandonment, and hereby requests a favorable response. Applicant further requests that the Amendment of March 7, 2003, be considered and an Office Action be issued.

**VI. In The Alternative, Applicant Hereby Petitions to Revive The Application as Unintentionally Abandoned Under 37 CFR § 1.137(b)**

In the interest of advancing prosecution of this case, should Applicant's prior faxed Request to Withdraw the Holding of Abandonment not be granted on its merits, Applicant hereby petitions, under 37 CFR § 1.137(b), to revive the above-identified Application based on evidence that the Amendment and the faxed Request were both timely filed and unresponded-to, thereby leading to intentional abandonment of the Application.

As discussed above, Applicant reasonably relied on the administrative procedures of the PTO and reasonably concluded that the case was successfully re-docketed for examination. Applicant's conclusion was especially reasonable given that both the Amendment and the faxed Request to Withdraw the Holding of Abandonment met all of the statutory and regulatory requirements and that Applicant received no notice from the PTO that the Request was denied or deficient in some formal regard. Given that timely receipt of both items was confirmed by the PTO, combined with the fact that no rejection followed, and further combined with the known backlog of cases at the PTO which often causes extended latency in prosecution, Applicant reasonably waited for the Examiner's consideration of the Request and the Amendment and the issue of an Office Action.

It is now evident, however, that action by the PTO is either unusually delayed or not forthcoming. Accordingly, should the timely faxed Request not be granted on its merits, Applicant, in the alternative, petitions for revival under 37 CFR § 1.137(b). The entire delay until the filing of this Petition was unintentional.



08-10.06

PATENTS  
112025-0116  
CPOL# 18361 Seq# 761

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re The Application of:  
Bernie Pearce et al.

Serial No.: 09/283,125

Filed: March 31, 1999

For: MAC Address Extension to Maintain  
Router Information In Source Routed  
Computer Networks

Examiner: Hom, Shick

Art Unit: 2666

Cesari and McKenna, LLP  
88 Black Falcon Avenue  
Boston, MA 02210  
August 9, 2006

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EXPRESS-MAIL DEPOSIT

"Express Mail" Mailing-Label Number: EV 916598303 US

The following papers are being deposited with the United States Postal Service  
"Express Mail Post Office to Addressee" service pursuant to 37 C.F.R. §1.10:

- X Check No. 33311 for \$1,500.00
- X Return Receipt Postcard
- X Petition to the Director Under 37 CFR 1.181(a) and 37 CFR 1.137(b)
- X Exhibits A and B

Exhibit A



ROBERT A. CESARI  
JOHN F. McKENNA  
MARTIN J. O'DONNELL  
THOMAS C. OKONSKI  
PATRICIA A. SHEEHAN  
MICHAEL E. ATTAYA  
CHARLES J. BARBAS  
WILLIAM A. LOGINOV  
MICHAEL R. REINEMANN  
RITA M. ROONEY  
JOHN L. CAPONE  
MICHAEL J. BADZINSKI  
ROBERT E. RIGBY, JR.  
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DUANE H. DREGER



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AND RELATED  
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**AUG 14 2006**

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**FACSIMILE COVER SHEET**

112025-0116

DATE: **August 8, 2003**

TOTAL PAGES WITH COVER: **24**

TO: **Examiner Shick Hom**

FIRM:

FACSIMILE NUMBER: **703-872-9314**

TELEPHONE NUMBER: **703-305-4742**

FROM: **A. Sidney Johnston**

COMMENTS:

Examiner Hom:

Included in this FAX are:

1. The Amendment, and other papers, which we filed on March 7, 2003, in response to the Office Action mailed on December 10, 2002;
2. A copy of the returned postcard which was stamped by the USPTO showing that the Amendment was received by the USPTO.

Please have the case revived and enter and consider the attached amendment.

Please call me if there is any question, Tel. 617-951-3028.

Thank you

Sidney Johnston



3/18/03

Date Due: 3/10/03

Date Mailed: 3/7/03

Date Filed: March 31, 1999

Inventor(s): Bernie Pearce et al.

Title: MAC Address Extension to Maintain Router Information In Source Routed Computer Networks

File No.: 112025-0116

Serial No.: 09/283,125

Group Art Unit: 2666

Honorable Commissioner of Patents and Trademarks: We are sending herewith:

☒ Amendment

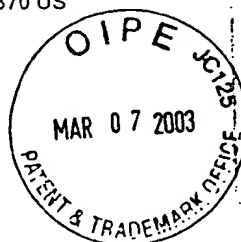
☒ Change of Correspondence Address

Kindly have the mail room stamp this card and return it to us so that we may know that the above mentioned papers were duly received.

Initials: ASJ/jpf

With Express Certificates of Mailing : EL 714 808 370 US

**CESARI and McKENNA, LLP**



800Z 21 800

Date Due: 3/10/03  
Date Mailed: 3/7/03  
Date Filed: March 31, 1999  
Inventor(s): Bernie Pearce et al.  
Title: MAC Address Extension to Maintain Router Information in Source Routed Computer Networks  
File No.: 112025-0116  
Serial No.: 09/283,125  
Group Art Unit: 2666  
Honorable Commissioner of Patents and Trademarks: We are sending herewith:  
☒ Amendment  
☐ Change of Correspondence Address

Kindly have the mail room stamp this card and return it to us so that we may know that the above mentioned papers were duly received.

Initials ASJ/jpf  
With Express Certificates of Mailing : EL 714 808 370 US

**CESARI and MCKENNA, LLP**


Exhibit A includes the Amendment of March 7, 2003. This Amendment is entirely responsive to the non-final Office Action of December 10, 2002, thereby meets the reply requirement of 37 CFR § 1.137(b).

Favorable action is respectfully solicited.

In the event that the Director and/or party reviewing this Petition deems personal contact desirable in disposition of this case, such party is encouraged to call the undersigned attorney at (617) 951-2500.

Please charge any additional fee occasioned by this paper to our Deposit Account No. 03-1237.

Respectfully submitted,

  
\_\_\_\_\_  
James A. Blanchette  
Reg. No. 51,477  
CESARI AND MCKENNA, LLP  
88 Black Falcon Avenue  
Boston, MA 02210-2414  
(617) 951-2500



#10

PATENTS  
112025-0116

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In Re The Application of: )  
Bernie Pearce et al. )  
Serial No.: 09/283,125 )  
Filed: March 31, 1999 )  
For: MAC Address Extension to )  
Maintain Router Information In )  
Source Routed Computer Net- )  
works )

Examiner: Hom, Shick

Art Unit: 2666

Cesari and McKenna, LLP  
88 Black Falcon Avenue  
Boston, MA 02210  
March 7, 2003

"Express Mail" Mailing-Label Number: EL 714 808 370 US

Honorable Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

**AMENDMENT**

This Amendment is in response to the Office action dated December 10, 2002. All objections and rejections are respectfully traversed.

**IN THE SPECIFICATION:**

Please replace the first full paragraph of specification page 2 with the following replacement paragraph to incorporate the revisions set forth on the accompanying replacement page:

— This Patent Application is related to a patent application filed by Pearce, et al. titled "Duplicate Ignore Delay Timer for ARP Like Protocol Messages using ARE Protocol",

U.S. Patent Application Serial Number 09/283,124, filed on even date with this patent application. —

**IN THE CLAIMS:**

Please replace claims 1, 3, 5, 6, 8, and 10-14 with the following amended versions thereof to incorporate the revisions set forth on the accompanying mark-up page:

1 1. (Amended) A method for routing a source routed packet to a Source Route  
2 Bridge (SRB) subnet for a destination station, comprising:  
3 maintaining an address resolution protocol table (ARP table) in a router having an  
4 entry for each station on said SRB subnet to which said router routes packets, said entry  
5 having a first field containing a Layer 3 address of said each station, said entry having a  
6 second field containing a Layer 2 address of said each station including a physical  
7 (MAC) address and routing information (RIF information) from said router to said each  
8 station; and  
9 writing said routing information read from said second field of said ARP table  
10 into a Route Information Field (RIF) in a message packet before routing said message  
11 packet to said SRB subnet for said destination station.

1 3. (Amended) A method for routing a source routed packet to a Source Route  
2 Bridge (SRB) subnet for a destination station, comprising:  
3 maintaining an address resolution protocol table (ARP table) in a router having an  
4 entry for each station on said SRB subnet to which said router routes packets, said entry  
5 having a first field containing a Layer 3 address of said each station, said entry having a  
6 second field containing a Layer 2 address of said each station including a physical

7 (MAC) address and routing information (RIF information) from said router to said each  
8 station;

9 writing said routing information read from said second field of said ARP table  
10 into a Route Information Field (RIF) in a message packet before routing said message  
11 packet to said SRB subnet for said destination station; and

12 populating said routing information in said ARP table by reading RIF information  
13 from a field of an Single Routes Explorer (SRE) packet, either a request or response  
14 packet.

1 5. (Amended) The method as in claim 1 further comprising: updating said second  
2 field of said ARP table when said router receives an ARP Explorer request packet from  
3 one of said stations on said SRB subnet and said request packet contains RIF information.

1 6. (Amended) A method for routing a source routed packet to a Source Route  
2 Bridge (SRB) subnet for a destination station, comprising:

3 maintaining an address resolution protocol table (ARP table) in a router having an  
4 entry for each station on said SRB subnet to which said router routes packets, said entry  
5 having a first field containing a Layer 3 address of said each station, said entry having a  
6 second field containing a Layer 2 address of said each station including a physical  
7 (MAC) address and routing information (RIF information) from said router to said each  
8 station;

9 writing said routing information read from said second field of said ARP table  
10 into a Route Information Field (RIF) in a message packet before routing said message  
11 packet to said SRB subnet for said destination station; and

12 transmitting an ARP Explorer request packet upon expiration of an ARP table  
13 flush timer, and updating said second field of said ARP table in response to receipt of an

14 ARP Explorer response packet transmitted by a station in response to said ARP Explorer  
15 request packet.

1 8. (Amended) A method for routing a source routed packet to a Source Route  
2 Bridge (SRB) subnet for a destination station, comprising:  
3 maintaining an address resolution protocol table (ARP table) in a router having an  
4 entry for each station on said SRB subnet to which said router routes packets, said entry  
5 having a first field containing a Layer 3 address of said each station, said entry having a  
6 second field containing a Layer 2 address of said each station including a physical  
7 (MAC) address and routing information (RIF information) from said router to said each  
8 station;  
9 writing said routing information read from said second field of said ARP table  
10 into a Route Information Field (RIF) in a message packet before routing said message  
11 packet to said SRB subnet for said destination station; and  
12 transmitting a validation frame upon expiration of a validation time interval, and  
13 in the absence of a response from said validation frame, transmitting an ARP Explorer  
14 request packet, and updating said second field of said ARP table in response to receipt of  
15 an ARP Explorer response packet transmitted by a station in response to said ARP Ex-  
16 plorer request packet.

1 10. (Amended) A router comprising:  
2 an address resolution protocol table (ARP table), said ARP table maintained in  
3 said router, said ARP table having an entry for each station on a Source Route Bridge  
4 (SRB) subnet to which said router routes packets, said entry having a first field contain-  
5 ing a Layer 3 address of said station, said entry having a second field containing a Layer  
6 2 address of said station including a physical (MAC) address and routing information  
7 (RIF information) from said router to said each station, and;

8 a packet format circuit to write required routing information read from said sec-  
9 ond field of said ARP table into a Route Information Field (RIF) in a message packet be-  
10 fore routing said message packet to a destination station on a destination SRB subnet.

1 11. (Amended) A router for routing a source routed packet to a Source Route  
2 Bridge (SRB) subnet for a destination station, comprising:

3 means for maintaining an address resolution protocol table (ARP table) in said  
4 router having an entry for each station on said SRB subnet to which said router routes  
5 packets, said entry having a first field containing a Layer 3 address of said each station,  
6 said entry having a second field containing a Layer 2 address of said each station includ-  
7 ing a physical (MAC) address and routing information (RIF information) from said router  
8 to said each station, and;

9 means for writing said routing information read from said second field of said  
10 ARP table into a Route Information Field (RIF) in a message packet before routing said  
11 message packet to said SRB subnet for said destination station.

1 12. (Amended) A computer readable device containing a computer program for  
2 performing a method of routing a source routed packet to a Source Route Bridge (SRB)  
3 subnet for a destination station, comprising:

4 maintaining an address resolution protocol table (ARP table) in a router having an  
5 entry for each station on said SRB subnet to which said router routes packets, said entry  
6 having a first field containing a Layer 3 address of said each station, said entry having a  
7 second field containing a Layer 2 address of said each station including a physical  
8 (MAC) address and routing information (RIF information) from said router to said each  
9 station, and;

10 writing said routing information read from said second field of said ARP table  
11 into a Route Information Field (RIF) in a message packet before routing said message  
12 packet to said SRB subnet for said destination station.



1 13. (Amended) Electronic data signals received through a port of a router, said elec-  
2 tronic data signals for implementing a method for routing a source routed packet to a Source  
3 Route Bridge (SRB) subnet for a destination station, comprising:

4 maintaining an address resolution protocol table (ARP table) in said router having an  
5 entry for each station on said SRB subnet to which said router routes packets, said entry  
6 having a first field containing a Layer 3 address of said each station, said entry having a sec-  
7 ond field containing a Layer 2 address of said each station including a physical (MAC) ad-  
8 dress and routing information (RIF information) from said router to said each station, and;  
9 writing said routing information read from said second field of said ARP table into a  
10 Route Information Field (RIF) in a message packet before routing said message packet to  
11 said SRB subnet for said destination station.

1 14. (Amended) An ARP table data structure stored in a computer memory of a router,  
2 comprising:

3 an entry for each station on a Source Route Bridge (SRB) subnet to which said router  
4 routes packets, said entry having a first field containing a Layer 3 address of each said sta-  
5 tion, said entry having a second field containing a Layer 2 address of said station including a  
6 physical (MAC) address and routing information (RIF information) from said router to said  
7 each station, said routing information in said second field of said ARP table used for writing  
8 RIF information into a Route Information Field (RIF) in a message packet before routing said  
9 message packet to said SRB subnet for said each station.

1

**IN THE ABSTRACT:**

Please replace the Abstract of the specification with the following replacement to in-  
corporate the revisions set forth on the accompanying replacement page:

— The invention solves the problem of maintaining Route Information Field (RIF) information in a router for populating the RIF field of packets routed by the router, by storing the RIF information with the Layer 2 address in the address binding table. The address binding table establishes a binding between a Layer 2 address and a Layer 3 address of a station. The Layer 2 address in the address binding table is extended to include the RIF information. The address binding table is normally maintained in the router in an architecture which permits rapid access for fast switching such as cut through routing. A separate RIF cache table, requiring a separate time consuming table look-up is thereby avoided. The address binding table is referred to as the Address Resolution Protocol (ARP) Table in IP protocol. The Layer 2 address is extended to include both MAC address and RIF information. The RIF information in the Layer 2 field of the ARP table is updated in response to execution of an ARP Explorer protocol by the router. RIF information is read from an ARP Explorer response packet and written into the Layer 2 field of the ARP table. The Layer 2 address, both MAC address and RIF information, is read from the ARP table for use in populating both the destination address field and the RIF field of a routed packet. —

#### REMARKS

This Amendment is in response to the Office action dated December 10, 2002. All objections and rejections are respectfully traversed.

Claims 1-23 are in the case.

Claims 1, 3, 5, 6, 8, and 10-14 were amended to better claim the invention.

At paragraph 1 of the Office Action the abstract of the disclosure was objected to for informalities. The abstract has been amended, and is believed to be in acceptable condition. It is believed that no new matter has been entered.

At paragraph 2 of the Office Action the disclosure was objected to because of informalities. The disclosure has been amended, and is believed to be in acceptable condition. Also, at paragraph 3, Applicant was requested to correct any minor errors in the specification. Applicant is not aware of any errors in the specification, and it is believed to be in allowable condition. It is believed that no new matter has been entered.

At paragraph 4 of the Office Action claims 1 and 10-14 were objected to because of informalities. Claims 1 and 10-14 have been amended, and are believed to be in allowable condition.

At paragraph 5 of the Office Action claims 1-23 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 1, 5, and 10-14 have been amended, and all claims are believed to be in allowable condition.

At paragraph 6 of the Office Action the Examiner pointed out Applicant's duty under 37 C.F.R. §1.56 to point out the inventor and invention dates of each claim that was not commonly owned. Applicant submits that all claims are commonly owned by all named inventors.

At paragraph 7 of the Office Action claims 1, 2, 4, 5, and 10-15 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bingham et al., U.S. Patent No. 6,198,747 issued on March 6, 2001, hereinafter Bingham, in view of Hashimoto, U.S. Patent No. 5,815,668 issued on September 29, 1998.

The present invention, as set forth in representative claim 1 comprises in part:

1. A method for routing a source routed packet to a Source Route Bridge (SRB) subnet for a destination station, comprising:

maintaining an address resolution protocol table (ARP table) in a router having an entry for each station on said SRB subnet to which said router routes packets, said entry having a first field containing a Layer 3 address of said each station, *said entry having a second field containing a Layer 2 address of said each station including a physical (MAC) address and routing information (RIF information) from said router to said each station; and*

*writing said routing information read from said second field of said ARP table into a Route Information Field (RIF) in a message packet before routing said message packet* to said SRB subnet for said destination station.

Bingham discloses a system and method for creating a routing information field (RIF) for an unknown destination router by sending an address resolution protocol (ARP) message to known routers of the network. The originating router then receives responses from the routers with information required to build the RIF, including the physical MAC addresses of the routers in the network. The originating router then stores the RIF in a table for future lookups of router addresses.

Hashimoto discloses a system for creating a routing table in a router having the physical addresses table and the network addresses table containing information on the routers in a network. Hashimoto explains how the "master" and "slave" network devices have the same tables.

Applicant respectfully urges that neither Bingham nor Hashimoto show Applicant's claimed novel *"said entry having a second field containing a Layer 2 address of said each station including a physical (MAC) address and routing information (RIF information) from said router to said each station; and writing said routing information read from said second field of said ARP table into a Route Information Field (RIF) in a message packet before routing said message packet."*

Applicant's presently claimed invention is directed to maintaining a routing table containing a physical MAC address *and* routing information, and writing both of these fields into a packet before routing the packet. In this way, a separate RIF table, requiring a separate time-consuming table look-up, is avoided, since the RIF information is now kept in the address binding table (ARP) which permits rapid access for fast switching. Neither Bingham nor Hashimoto address merging both fields into one table, nor do either show writing these fields, as part of the same entry, into a packet prior to routing the packet to alleviate future look-up of the information.

Applicant respectfully urges that the Bingham patent and the Hashimoto patent, either taken singly or taken in any combination are legally insufficient to render the presently claimed invention obvious under 35 U.S.C. §103(a) because of the absence in each of the cited patents of Applicant's claimed novel *"said entry having a second field containing a Layer 2 address of said each station including a physical (MAC) address and routing information (RIF information) from said router to said each station; and writing said routing information read from said second field of said ARP table into a Route Information Field (RIF) in a message packet before routing said message packet."*

At paragraph 10 of the Office Action examiner stated that claims 3 and 6-9 would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Claims 3, 6, and 8 have been amended into independent form, and all claims 3, and 6-9 are believed to be in condition for allowance.

All independent claims are believed to be in condition for allowance.

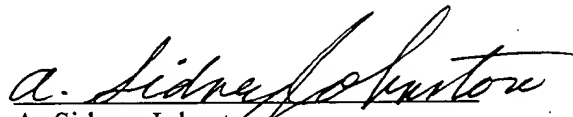
All dependent claims are believed to be dependent from allowable independent claims, and therefore in condition for allowance.

PATENTS  
112025-0116

Favorable action is respectfully solicited.

Please charge any additional fee occasioned by this paper to our Deposit Account No.  
03-1237.

Respectfully submitted,

A handwritten signature in cursive script, reading "A. Sidney Johnston".

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**MARK-UP PAGES FOR THE MARCH 7, 2003, AMENDMENT TO  
U.S. PATENT APPLICATION SER. NO. 09/283,125**

*The replacement for the first full paragraph of page 2 resulted from the following changes:*

This Patent Application is related to a patent application filed by Pearce, et al. titled "Duplicate Ignore Delay Timer for ARP Like Protocol Messages using ARE Protocol", U.S. Patent Application Serial Number 09/283,124, [Attorney Docket No. 112025-0113,] filed on even date with this patent application [, and having Serial Number \_\_\_\_ ].

*The replacement for the Abstract resulted from the following changes:*

The invention solves the problem of maintaining Route Information Field (RIF) information in a router for populating the RIF field of packets routed by the router, by storing the RIF information with the Layer 2 address in the address binding table. The address binding table establishes a binding between a Layer 2 address and a Layer 3 address of a station. The Layer 2 address in the address binding table is extended to include the RIF information. The address binding table is normally maintained in the router in an architecture which permits rapid access for fast switching such as cut through routing. A separate RIF cache table, requiring a separate time consuming table look-up is thereby avoided. The address binding table is referred to as the Address Resolution Protocol (ARP) Table in IP protocol. The Layer 2 address is extended to include both MAC address and RIF information. The RIF information in the Layer 2 field of the ARP table is updated in response to execution of an ARP Explorer protocol by the router. RIF information is read from an ARP Explorer response packet and written into the Layer 2 field of the ARP table. The Layer 2 address, both MAC address and RIF information, is read from the ARP table for use in populating both the destination address field and the RIF field of a routed packet.

*The replacement for claims 1, 3, 5, 6, 8, and 10-14 resulted from the following changes:*

1 1. (Amended) A method for routing a source routed packet to [an] a Source Route  
2 Bridge (SRB) subnet for a destination station, comprising:

3 maintaining an address resolution protocol table (ARP table) in a router having an  
4 entry for each station on said SRB subnet to which said router routes packets, said entry  
5 having a first field containing a Layer 3 address of said each station, said entry having a  
6 second field containing a Layer 2 address of said each station including a physical  
7 (MAC) address and routing information (RIF information) from said router to said each  
8 station; and

9 writing said routing information read from said second field of said ARP table  
10 into a Route Information Field (RIF) in a message packet before routing said message  
11 packet to said SRB subnet for said destination station.

1 3. (Amended) A method for routing a source routed packet to a Source Route  
2 Bridge (SRB) subnet for a destination station, comprising:

3 maintaining an address resolution protocol table (ARP table) in a router having an  
4 entry for each station on said SRB subnet to which said router routes packets, said entry  
5 having a first field containing a Layer 3 address of said each station, said entry having a  
6 second field containing a Layer 2 address of said each station including a physical  
7 (MAC) address and routing information (RIF information) from said router to said each  
8 station;

9 writing said routing information read from said second field of said ARP table  
10 into a Route Information Field (RIF) in a message packet before routing said message  
11 packet to said SRB subnet for said destination station; and

12 [The method as in claim 1 further comprising:]



13       populating said routing information in said ARP table by reading RIF information  
14       from a field of an Single Routes Explorer (SRE) packet, either a request or response  
15       packet.

1       5.       (Amended)   The method as in claim 1 further comprising: updating said sec-  
2       ond field of said ARP table when said router receives an ARP Explorer request packet  
3       from [a] one of said stations on said SRB subnet and said request packet contains RIF  
4       information.

1       6.       (Amended)   A method for routing a source routed packet to a Source Route  
2       Bridge (SRB) subnet for a destination station, comprising:  
3       maintaining an address resolution protocol table (ARP table) in a router having an  
4       entry for each station on said SRB subnet to which said router routes packets, said entry  
5       having a first field containing a Layer 3 address of said each station, said entry having a  
6       second field containing a Layer 2 address of said each station including a physical  
7       (MAC) address and routing information (RIF information) from said router to said each  
8       station;  
9       writing said routing information read from said second field of said ARP table  
10       into a Route Information Field (RIF) in a message packet before routing said message  
11       packet to said SRB subnet for said destination station; and

12       [The method as in claim 1 further comprising:]

13       transmitting an ARP Explorer request packet upon expiration of an ARP table  
14       flush timer, and updating said second field of said ARP table in response to receipt of an  
15       ARP Explorer response packet transmitted by a station in response to said ARP Explorer  
16       request packet.

1 8. (Amended) A method for routing a source routed packet to a Source Route  
2 Bridge (SRB) subnet for a destination station, comprising:  
3 maintaining an address resolution protocol table (ARP table) in a router having an  
4 entry for each station on said SRB subnet to which said router routes packets, said entry  
5 having a first field containing a Layer 3 address of said each station, said entry having a  
6 second field containing a Layer 2 address of said each station including a physical  
7 (MAC) address and routing information (RIF information) from said router to said each  
8 station;  
9 writing said routing information read from said second field of said ARP table  
10 into a Route Information Field (RIF) in a message packet before routing said message  
11 packet to said SRB subnet for said destination station; and  
12 [The method as in claim 1 further comprising:]  
13 transmitting a validation frame upon expiration of a validation time interval; and  
14 in the absence of a response from said validation frame, transmitting an ARP Explorer  
15 request packet, and updating said second field of said ARP table in response to receipt of  
16 an ARP Explorer response packet transmitted by a station in response to said ARP Ex-  
17 plorer request packet.

1 10. (Amended) A router comprising:  
2 an address resolution protocol table (ARP table), said ARP table maintained in  
3 said router, said ARP table having an entry for each station on a Source Route Bridge  
4 (SRB) subnet to which said router routes packets, said entry having a first field contain-  
5 ing a Layer 3 address of said station, said entry having a second field containing a Layer  
6 2 address of said station including a physical (MAC) address and routing information  
7 (RIF information) from said router to said each station, and;  
8 a packet format circuit to write required routing information read from said sec-  
9 ond field of said ARP table into a Route Information Field (RIF) in a message packet be-  
10 fore routing said message packet to a destination station on a destination SRB subnet.

1 11. (Amended) A router for routing a source routed packet to [an] a Source Route  
2 Bridge (SRB) subnet for a destination station, comprising:

3 means for maintaining an address resolution protocol table (ARP table) in [a] said  
4 router having an entry for each station on said SRB subnet to which said router routes  
5 packets, said entry having a first field containing a Layer 3 address of said each station,  
6 said entry having a second field containing a Layer 2 address of said each station includ-  
7 ing a physical (MAC) address and routing information (RIF information) from said router  
8 to said each station, and;

9 means for writing said routing information read from said second field of said  
10 ARP table into a Route Information Field (RIF) in a message packet before routing said  
11 message packet to said SRB subnet for said destination station.

1 12. (Amended) A computer readable device containing a computer program for  
2 performing a method of routing a source routed packet to [an] a Source Route Bridge  
3 (SRB) subnet for a destination station, comprising:

4 maintaining an address resolution protocol table (ARP table) in a router having an  
5 entry for each station on said SRB subnet to which said router routes packets, said entry  
6 having a first field containing a Layer 3 address of said each station, said entry having a  
7 second field containing a Layer 2 address of said each station including a physical  
8 (MAC) address and routing information (RIF information) from said router to said each  
9 station, and;

10 writing said routing information read from said second field of said ARP table  
11 into a Route Information Field (RIF) in a message packet before routing said message  
12 packet to said SRB subnet for said destination station.

1 13. (Amended) Electronic data signals received through a port of a router, said elec-  
2 tronic data signals for implementing a method for routing a source routed packet to [an] a  
3 Source Route Bridge (SRB) subnet for a destination station, comprising:

4 maintaining an address resolution protocol table (ARP table) in [a] said router having  
5 an entry for each station on said SRB subnet to which said router routes packets, said entry  
6 having a first field containing a Layer 3 address of said each station, said entry having a sec-  
7 ond field containing a Layer 2 address of said each station including a physical (MAC) ad-  
8 dress and routing information (RIF information) from said router to said each station, and;

9 writing said routing information read from said second field of said ARP table into a  
10 Route Information Field (RIF) in a message packet before routing said message packet to  
11 said SRB subnet for said destination station.

1 14. (Amended) An ARP table data structure stored in a computer memory of a router,  
2 comprising:

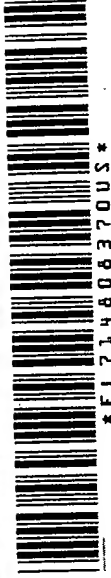
3 an entry for each station on [an] a Source Route Bridge (SRB) subnet to which said  
4 router routes packets, said entry having a first field containing a Layer 3 address of each said  
5 station, said entry having a second field containing a Layer 2 address of said station includ-  
6 ing a physical (MAC) address and routing information (RIF information) from said router to  
7 said each station, said routing information in said second field of said ARP table used for  
8 writing RIF information into a Route Information Field (RIF) in a message packet before  
9 routing said message packet to said SRB subnet for said each station.

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A. Sidney Johnston

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Examiner Hom:

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PATENTS  
112025-0116

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In Re The Application of: )  
Bernie Pearce et al. )  
Serial No.: 09/283,125 )  
Filed: March 31, 1999 )  
For: MAC Address Extension to Maintain )  
Router Information In Source Routed )  
Computer Networks )

Examiner: Hom, Shick  
Art Unit: 2666

Cesari and McKenna, LLP  
88 Black Falcon Avenue  
Boston, MA 02210  
March 7, 2003

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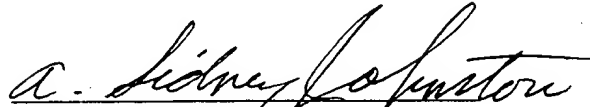
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PATENTS  
112025-0116

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No. 03-1237.

Respectfully submitted,



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